



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,260	01/26/2004	Gunnar Brandt	029777-017	6474

55694 7590 07/20/2006

DRINKER BIDDLE & REATH (DC)
1500 K STREET, N.W.
SUITE 1100
WASHINGTON, DC 20005-1209

EXAMINER

DANIELS, MATTHEW J

ART UNIT	PAPER NUMBER
----------	--------------

1732

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/763,260

Applicant(s)

BRANDT, GUNNAR

Examiner

Matthew J. Daniels

Art Unit

1732

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 28 June 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☒ The Notice of Appeal was filed on 28 June 2006. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: 1-32.
Claim(s) withdrawn from consideration: 33-41.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See the enclosed response to arguments.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.

Continuation of 3. NOTE: The amendments to Claim 1 contain a change in scope of the claims and would require at least further consideration .

Response to Arguments

Applicant's arguments filed 28 June 2006, with respect to the rejection of Claim 2 under 35 USC 112, second paragraph, and further referencing the arguments filed 14 September 2005 have been fully considered and are persuasive. The rejection of Claim 2 under 35 USC 112, second paragraph would be withdrawn, and prosecution remains closed.

Applicant's arguments filed 28 June 2006 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) Applicant presents a table to summarize the conditions of Goldberger, Yan, and Shen. At least the heating rate feature and the P80 of alumina feature are not disclosed, taught, or suggested.
- b) Each of the references is deficient to some claimed condition.
- c) Not all features are disclosed, taught, or suggested, namely the narrow alumina grain size distribution (Page 12).
- d) Some of the references in the proposed combination teach away from each other and therefore there is no motivation to combine. Pressureless sintering is stated by Goldberger to be unfavorable. Goldberger describes how parameters for pressureless sintering are different requiring different starting materials.
- e) There is a general lack of motivation to combine the references, there is selective combination, or hindsight reconstruction. An increased density is not the only result of the method. The inclusion of at least the P80 of alumina in the method provides an inventive feature. The improved thermal shock resistance and toughness.
- f) Even if properly combined, there is a missing element, namely the heating rates.

Art Unit: 1732

g) Brandt does not disclose the missing features.

a) Applicant's table clearly helps summarize the issues in this case, but misses several important points. Firstly, the table concedes that the claimed sintering temperatures are known, the claimed holding times are known, and the holding pressure are known. Applicant's remarks argue that the heating rate feature is not taught or suggested, but Applicant's own table shows the heating rate of Yang to be within or abutting the claimed range. It is unclear how this can be interpreted to be a failure to teach or suggest this limitation. However, Applicant's summary misses at least two other important aspects, namely that Shen also teaches a heating rate of 50 C/min, and Yang teaches grain sizes that fall within the claimed size range (4:11-14). See the following portion on page 1923 of the reference to Shen:

(4) Heating-Rate Effect

Heating rates ranging from 50 to almost 600°C/min were tested. A pressure of 50 MPa was applied during the entire sintering cycle, and the samples were heated to 1300° or 1400°C, without holding at T_F . With heating rates $\leq 350^\circ\text{C/min}$, fully dense samples were obtained, but faster rates yielded porous structures, as shown in Figs. 7 and 8.

In response to Applicant's arguments against the rejection of Claim 26 for an asserted failure to teach the "P80", Applicant's later remarks (Page 12, bottom four lines) assert that this pertains to a "very narrow alumina grain size distribution...determined by the 80th percentile of the width of the alumina grain sizes." The Examiner asserts that what Applicant claims is not a "narrow" size distribution, but instead a *small* average size. No standard deviation or other measure of size *range* is claimed. These arguments do not appear to consider Yang's teaching at 4:11-14 where Yang teaches that "Thus, the present invention further provides a fired ceramic composite comprising 65 to 85 wt % of the alumina with a median particle size in the size range

of 0.4 to 1.5 $d_{50}\mu\text{m}$ ". The Examiner asserts that all of the processing conditions and the result which Applicant asserts to be novel are found in the prior art.

b) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

c) This argument to the "narrow" alumina grain size distribution is not commensurate with the scope of Claim 26, which requires only a small grain size. Moreover, this aspect is taught in the Examiner's response above in part a).

d) The Examiner asserts that Yang was relied upon for particular aspects about the preparation of the compositions, a sintering temperature range, and also for the motivation to combine the references to increase the density of the resulting product. There is no teaching away in the reference to Goldberger against these aspects.

e) The Applicant's arguments do not appear to show why the motivation provided is invalid. Increased density was clearly desirable to the references, and the Examiner maintains his position that such motivation is valid.

However, when addressing the motivation to make the combination, it must also be noted that Applicant filed an Information Disclosure Statement on 14 September 2005 (appearing to be the result of a European search performed on 20 June 2003) which cites three articles OH, SUNG-TAG ET AL., RONGTI LI ET AL., and CHOA, YONG-HO ET AL. The Examiner asserts that these references teach spark plasma sintering of silicon carbide/alumina composites by spark plasma sintering, which passes current at least partially through the sample. The

Art Unit: 1732

Examiner further asserts that these references provide evidence that these references are substantially similar to the combination proposed by the Examiner in the final rejection of the instant claims, and provide evidence that such a combination was obvious to the ordinary artisan. Additionally, for the reasons noted above in part a), the Examiner asserts that the particular grain sizes are known.

f) Applicant is referred to their own table on page 10 of the remarks which shows 20 degrees C/min in the reference to Yang, which abuts Applicant's range in the table. Applicant's range is also shown in the reference to Shen above under part a) (See 50 C/min in the reproduced text).

g) The reference was not particularly argued aside from its dependence on a claim which Applicant's asserts to be patentable.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1732

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 7/14/06


CHRISTINA JOHNSON
PRIMARY EXAMINER
7/14/06